4-CHANNEL POWER AMPLIFIER

# KAC-8070

# SERVICE MANUAL

KENWOOD

KENWOOD CORPORATION

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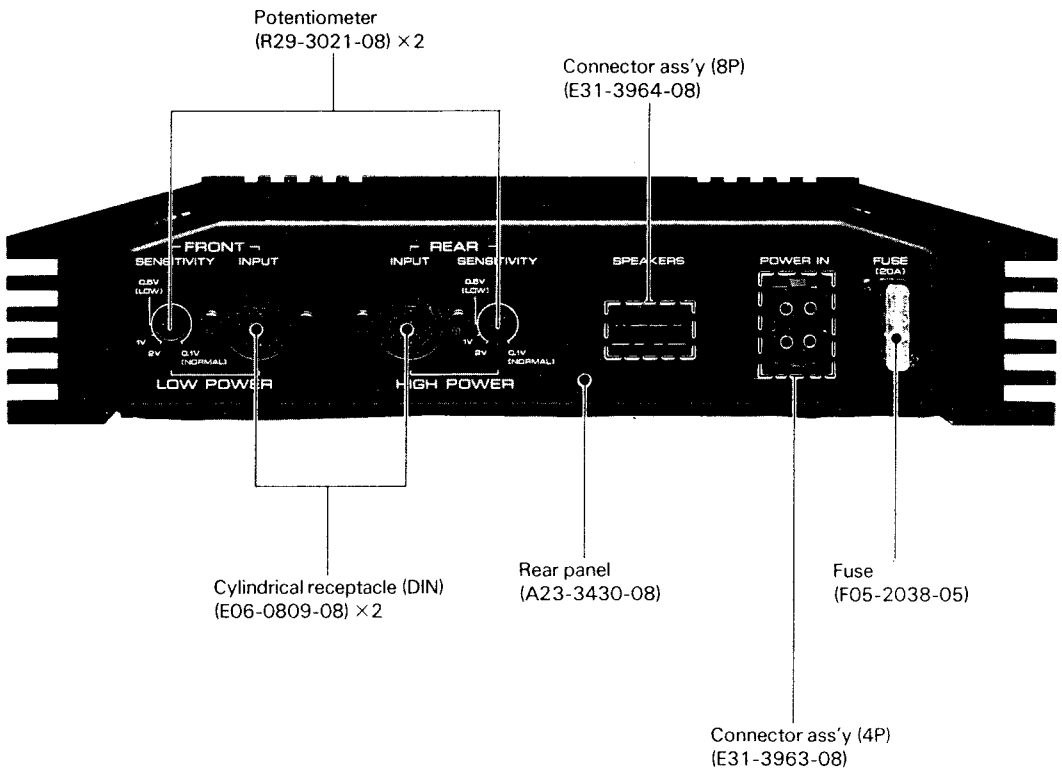
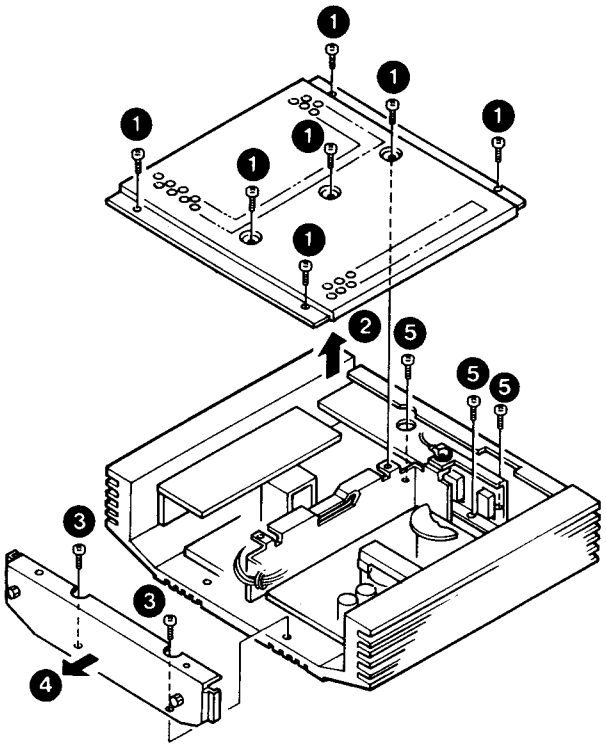
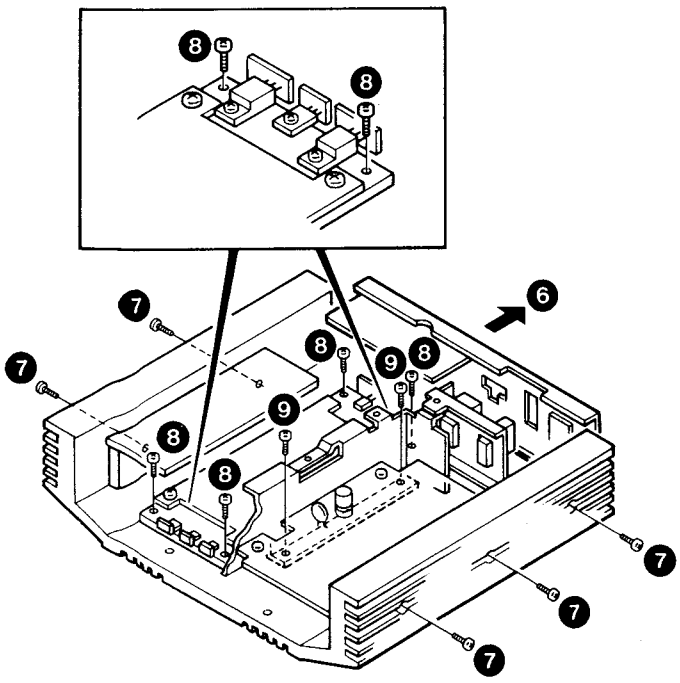
B51-3084-00(B) 3109

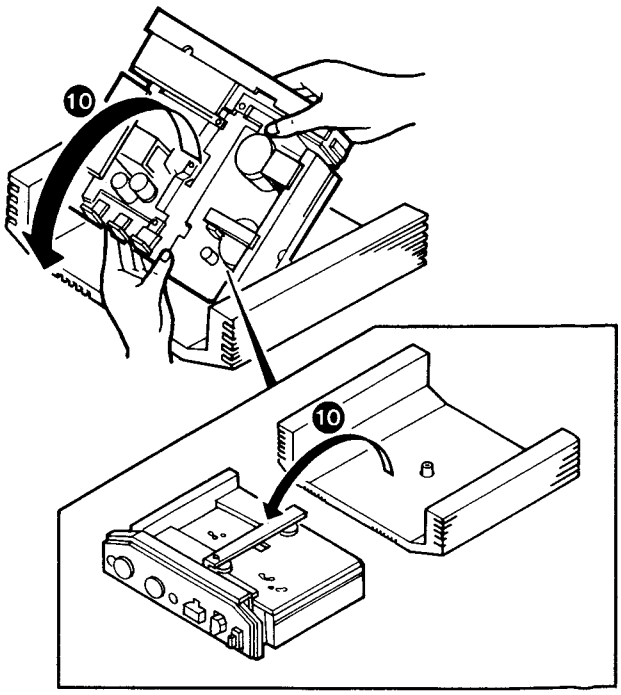


# DISASSEMBLY FOR REPAIR

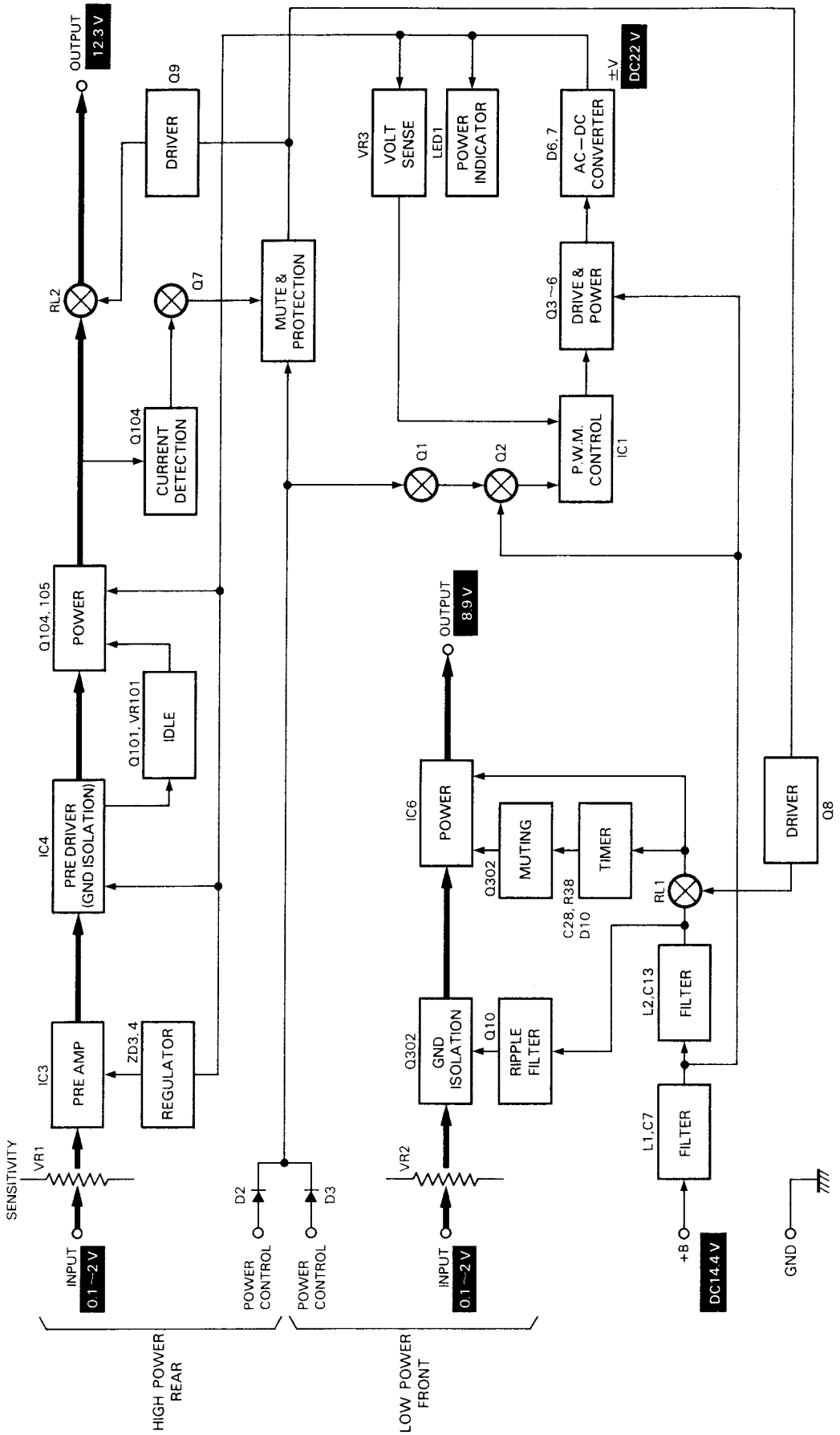
1. Remove the 7 screws on the bottom plate (❶).
2. Remove the bottom plate in the direction of the arrow (❷).
3. Remove the 2 screws on the front panel (❸).
4. Remove the front panel in the direction of the arrow (❹).
5. Remove the 3 screws on the rear panel and holder (❺).
6. Pull out the rear panel in the direction of the arrow (❻).
7. Remove the 5 screws on the heat sink (❼).
8. Remove the 4 screws on the transistor mounting hardware (❽).
9. Remove the 2 screws on the frame (❾).
10. Raise the PC board and rear panel and turn them in the direction of the arrow to remove from heat sink (❿). The pattern side of the PC board faces up.



# BLOCK LEVEL DIAGRAM



# CIRCUIT DESCRIPTION

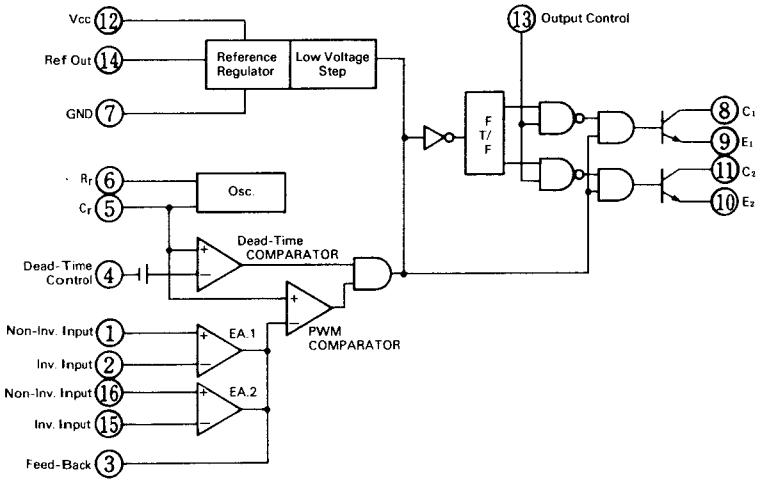
## DC/DC power supply circuit

**Features:**

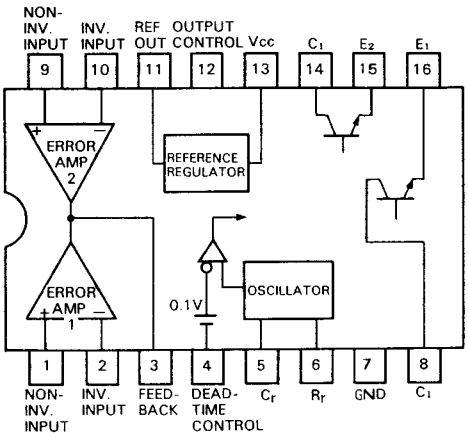
- Clock waveform is changed to pulse-width control system from pulse-width fixed system for greater AM/FM radiation when comparing with the conventional amplifier.
- The improved regulation of power supply to the amplifier effectively decreases the rise of heat at the normal listening volume level.
- Dead time can be set to the clock waveform for higher reliability.
- Regulation of the secondary side power supply is improved from the primary side of the DC power supply (battery)/AC (alternative).
- Switching regulator control IC is provided to simplify the circuit.

## Switching regulator control IC: $\mu$PC494C

**Block Diagram**



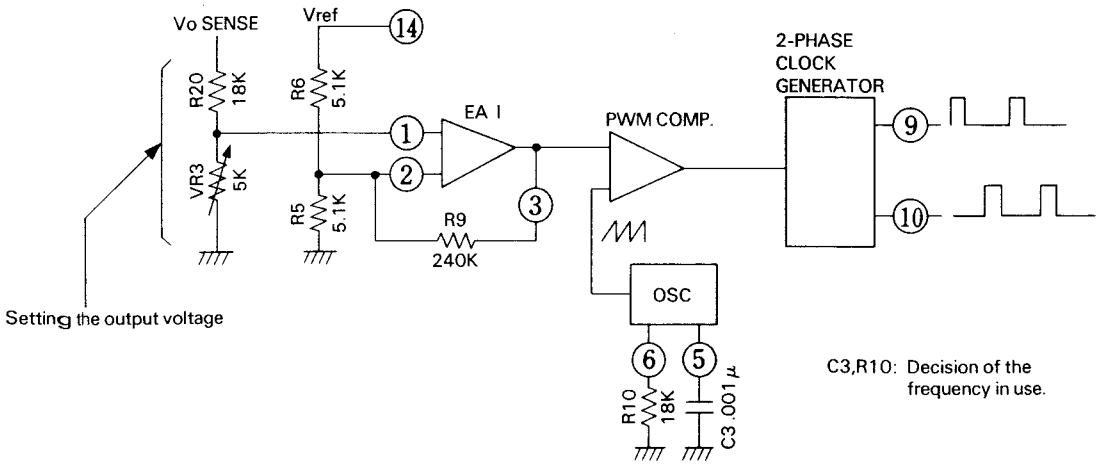

**Connection Diagram (Top View)**




In the above block diagram, EA2 at pin 15, 16 is not used.

**Detailed description of the circuit** (Reference numbers attached to the parts in the diagram are same as the actual circuit.)

- Voltage control amp (EA I) → 2-phase clock generator

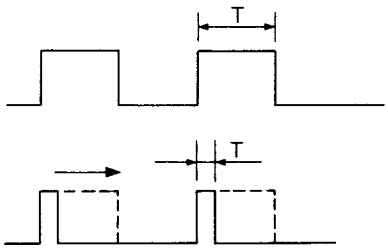


# CIRCUIT DESCRIPTION

## Clock waveform comparison

**KAC-7020:**
T is fixed regardless of the loaded condition of output voltage, etc.

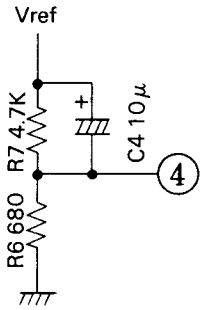
**KAC-8070:**
T (pulse width) is widened by 47% at maximum when the output voltage is increased or load is varied.




## Dead time control circuit

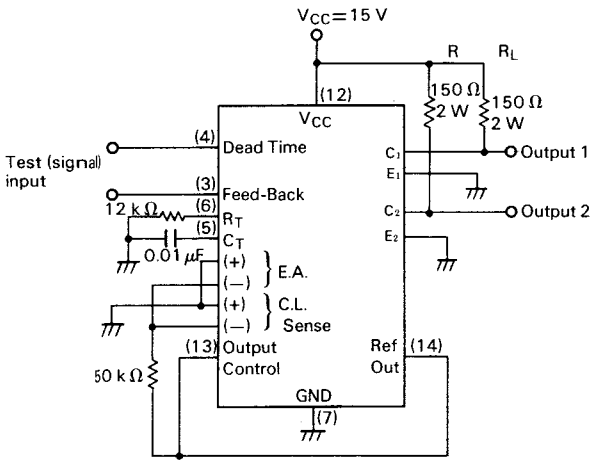
**R6, 7:**
Clock waveform is provided during the quiescent time to prevent cross current from occuring at Q5, 6 when overloaded.

**C4:**
For reducing the rush current when starting up.




## Characteristic test circuit and operational waveforms

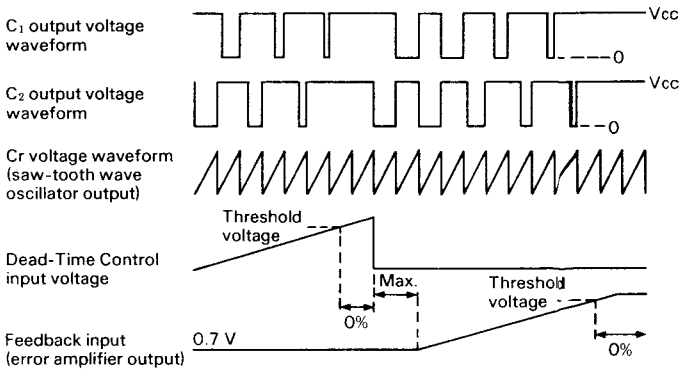
### Test circuit




* Film capacitor is used

Note:
When emitter follower is output, the connecting method is changed. Connect $C_1$ and $C_2$ to Vcc and connect $E_1$ and $E_2$ to GND (ground) via RL respectively.

### Operational waveforms




## Output control pin connections (13-pin)

| 13-pin connection status | Operation mode |
|---|---|
| Ref Out | Push-pull |
| GND | Single ($C_1$, $C_2$ in-phase) |

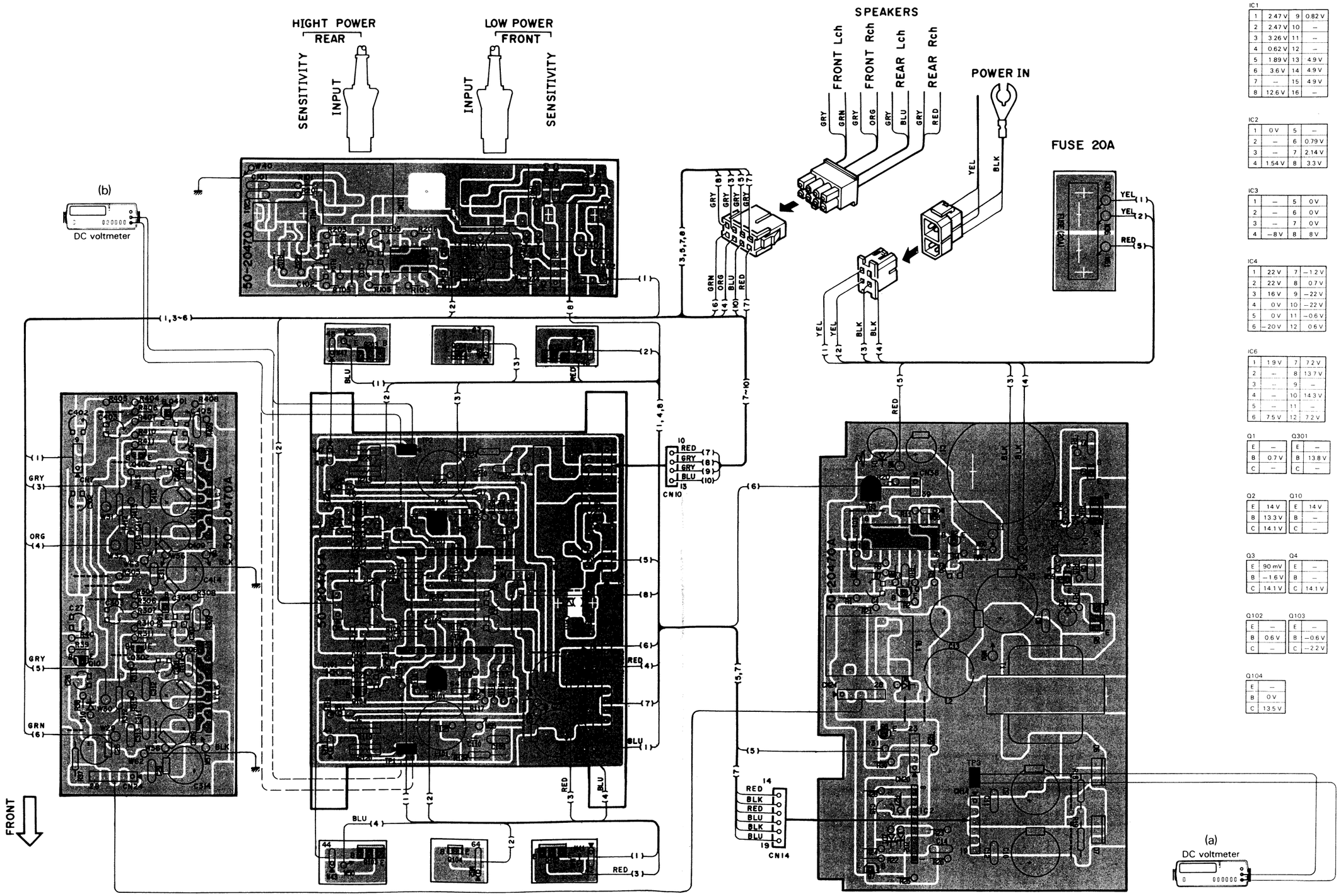
# ADJUSTMENT/REGLAGE/ABGLEICH

| No. | ITEM | INPUT SETTINGS | OUTPUT SETTINGS | AMPLIFIER SETTINGS | ALIGNMENT POINTS | ALIGN FOR | FIG. |
|---|---|---|---|---|---|---|---|
| 1 | DC/DC CONVERTER VOLTAGE | – | Connect a DC voltmeter to TP3. | VOLUME: 0 | VR3 | 22V | (a) |
| 2 | IDLE CURRENT | – | Connect a DC voltmeter to TP1 and TP2. | VOLUME: 0 | VR101 (L) VR201 (R) | 6mV | (b) |

| N° | ITEM | REGLAGE DE L'ENTREE | REGLAGE DE LA SORTIE | REGLAGE DE L'AMPLIFICATEUR | POINS L'ALIGNEMENT | ALIGNER POUR | FIG. |
|---|---|---|---|---|---|---|---|
| 1 | TENTION DE CONVERTISSEUR CC/CC | – | Connecter un voltmètre de CC au TP3. | VOLUME: 0 | VR3 | 22V | (a) |
| 2 | COURANT DE POLARISATION | – | Connecter un voltmètre de CC au TP1 et TP2. | VOLUME: 0 | VR101 (G) VR201 (D) | 6mV | (b) |

| NR. | GEGENSTAND | EINGANGS-EINSTELLUNG | AUSGANGS-EINSTELLUNG | VERSTÄRKER EINSTELLUNG | ABGLEICH-PUNKTE | ABGLEICHEN FÜR | ABB. |
|---|---|---|---|---|---|---|---|
| 1 | DES GLEICHSTROM/ GLEICHSTROM-KONVERTERS SPANNUNG | – | Einen Gleichspannungs-messer zu TP3 anschließen. | VOLUME: 0 | VR3 | 22V | (a) |
| 2 | LEERLAUF-STROM | – | Einen Gleichspannungs-messer zu TP1 und TP2 anschließen. | VOLUME: 0 | VR101 (L) VR102 (R) | 6mV | (b) |

# PC BOARD (COMPONENT SIDE)




KAC-8070

Refer to the schematic diagram for the values of resistors and capacitors.

IC1

| | | | |
|---|---|---|---|
| 1 | 2.47 V | 9 | 0.82 V |
| 2 | 2.47 V | 10 | – |
| 3 | 3.26 V | 11 | – |
| 4 | 0.62 V | 12 | – |
| 5 | 1.89 V | 13 | 4.9 V |
| 6 | 3.6 V | 14 | 4.9 V |
| 7 | – | 15 | 4.9 V |
| 8 | 12.6 V | 16 | – |

IC2

| | | | |
|---|---|---|---|
| 1 | 0 V | 5 | – |
| 2 | – | 6 | 0.79 V |
| 3 | – | 7 | 2.14 V |
| 4 | 1.54 V | 8 | 3.3 V |

IC3

| | | | |
|---|---|---|---|
| 1 | – | 5 | 0 V |
| 2 | – | 6 | 0 V |
| 3 | – | 7 | 0 V |
| 4 | –8 V | 8 | 8 V |

IC4

| | | | |
|---|---|---|---|
| 1 | 22 V | 7 | –12 V |
| 2 | 22 V | 8 | 0.7 V |
| 3 | 16 V | 9 | –22 V |
| 4 | 0 V | 10 | –22 V |
| 5 | 0 V | 11 | –0.6 V |
| 6 | –20 V | 12 | 0.6 V |

IC6

| | | | |
|---|---|---|---|
| 1 | 1.9 V | 7 | 7.2 V |
| 2 | – | 8 | 13.7 V |
| 3 | – | 9 | – |
| 4 | – | 10 | 14.3 V |
| 5 | – | 11 | – |
| 6 | 7.5 V | 12 | 7.2 V |

Q1

| | |
|---|---|
| E | – |
| B | 0.7 V |
| C | – |

Q301

| | |
|---|---|
| E | – |
| B | 13.8 V |
| C | – |

Q2

| | |
|---|---|
| E | 14 V |
| B | 13.3 V |
| C | 14.1 V |

Q10

| | |
|---|---|
| E | 14 V |
| B | – |
| C | – |

Q3

| | |
|---|---|
| E | 90 mV |
| B | –1.6 V |
| C | 14.1 V |

Q4

| | |
|---|---|
| E | – |
| B | – |
| C | 14.1 V |

Q102

| | |
|---|---|
| E | – |
| B | 0.6 V |
| C | – |

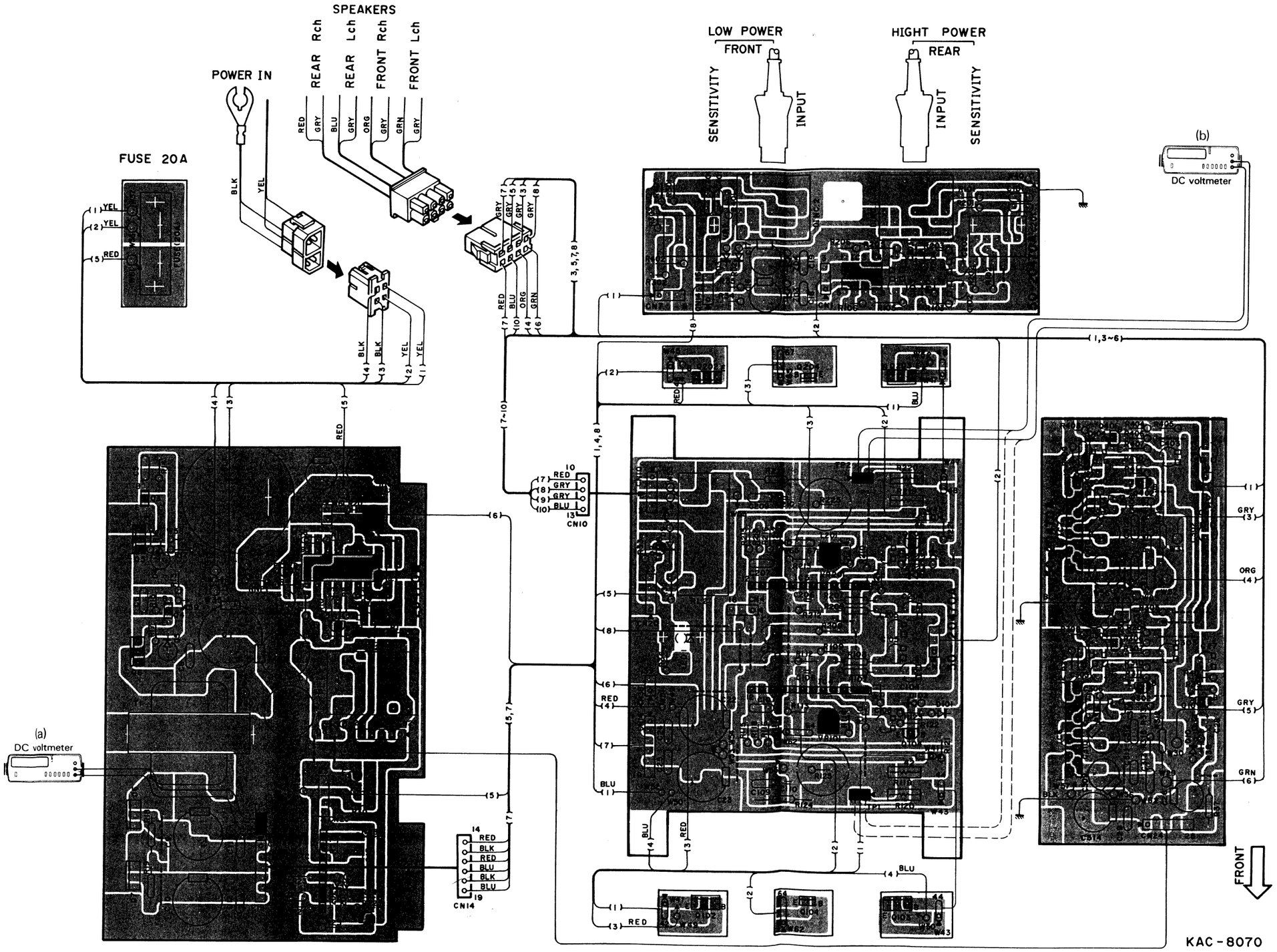
Q103

| | |
|---|---|
| E | – |
| B | –0.6 V |
| C | –2.2 V |

Q104

| | |
|---|---|
| E | – |
| B | 0 V |
| C | 13.5 V |

# PC BOARD (FOIL SIDE)




Refer to the schematic diagram for the values of resistors and capacitors.

IC1

| | | | |
|---|---|---|---|
| 1 | 2.47 V | 9 | 0.82 V |
| 2 | 2.47 V | 10 | — |
| 3 | 3.26 V | 11 | — |
| 4 | 0.62 V | 12 | — |
| 5 | 1.89 V | 13 | 4.9 V |
| 6 | 3.6 V | 14 | 4.9 V |
| 7 | — | 15 | 4.9 V |
| 8 | 12.6 V | 16 | — |

IC2

| | | | |
|---|---|---|---|
| 1 | 0 V | 5 | — |
| 2 | — | 6 | 0.79 V |
| 3 | — | 7 | 2.14 V |
| 4 | 1.54 V | 8 | 3.3 V |

IC3

| | | | |
|---|---|---|---|
| 1 | — | 5 | 0 V |
| 2 | — | 6 | 0 V |
| 3 | — | 7 | 0 V |
| 4 | −8 V | 8 | 8 V |

IC4

| | | | |
|---|---|---|---|
| 1 | 22 V | 7 | −12 V |
| 2 | 22 V | 8 | 0.7 V |
| 3 | 16 V | 9 | −22 V |
| 4 | 0 V | 10 | −22 V |
| 5 | 0 V | 11 | −0.6 V |
| 6 | −20 V | 12 | 0.6 V |

IC6

| | | | |
|---|---|---|---|
| 1 | 1.9 V | 7 | 7.2 V |
| 2 | — | 8 | 13.7 V |
| 3 | — | 9 | — |
| 4 | — | 10 | 14.3 V |
| 5 | — | 11 | — |
| 6 | 7.5 V | 12 | 7.2 V |

Q1

| | |
|---|---|
| E | — |
| B | 0.7 V |
| C | — |

Q301

| | |
|---|---|
| E | — |
| B | 13.8 V |
| C | — |

Q2

| | |
|---|---|
| E | 14 V |
| B | 13.3 V |
| C | 14.1 V |

Q10

| | |
|---|---|
| E | 14 V |
| B | — |
| C | — |

Q3

| | |
|---|---|
| E | 90 mV |
| B | −1.6 V |
| C | 14.1 V |

Q4

| | |
|---|---|
| E | — |
| B | — |
| C | 14.1 V |

Q102

| | |
|---|---|
| E | — |
| B | 0.6 V |
| C | — |

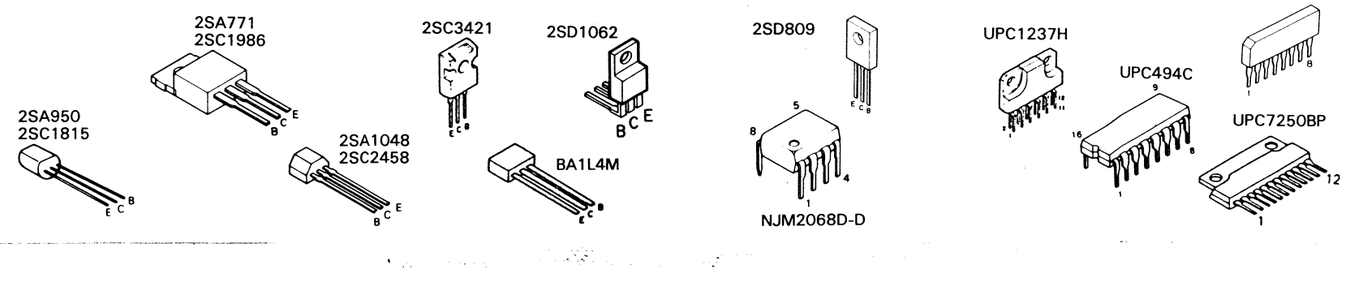
Q103

| | |
|---|---|
| E | — |
| B | −0.6 V |
| C | −2.2 V |

Q104

| | |
|---|---|
| E | — |
| B | 0 V |
| C | 13.5 V |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| IC1 | : μPC494C | Q1,104,204 | : 2SC2458(GR) | Q10 | : 2SC1815(BL) | D1 | : RM4Z | D7 | : FMU12R | LED1 | : B30-1120-08 |
| IC2 | : μPC1237H | Q2,8,9 | : 2SA950(Y) | Q101,201 | : 2SC3421(Y) | D2,3,10,101 102,201,202 | : IS2076A | D8,9 | : 1N4002 | | |
| IC3 | : NJM2068D-D | Q3,4 | : 2SD809(F,E) | Q102,202 | : 2SC1986(O,Y) | | | ZD1 | : HZ7C1L | | |
| IC4,5 | : μPC1270H | Q5,6 | : 2SD1062(S) | Q103,203 | : 2SA771(O,Y) | D4,5 | : RH1Z | ZD2 | : HZ6C2L | | |
| IC6,7 | : TA7250BP | Q7,301,401 | : 2SA1048(GR) | Q302,402 | : BA1L4M | D6 | : FMU12S | ZD3,4 | : HZ9A-2 | | |




GND LINE
+B LINE
−B LINE

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

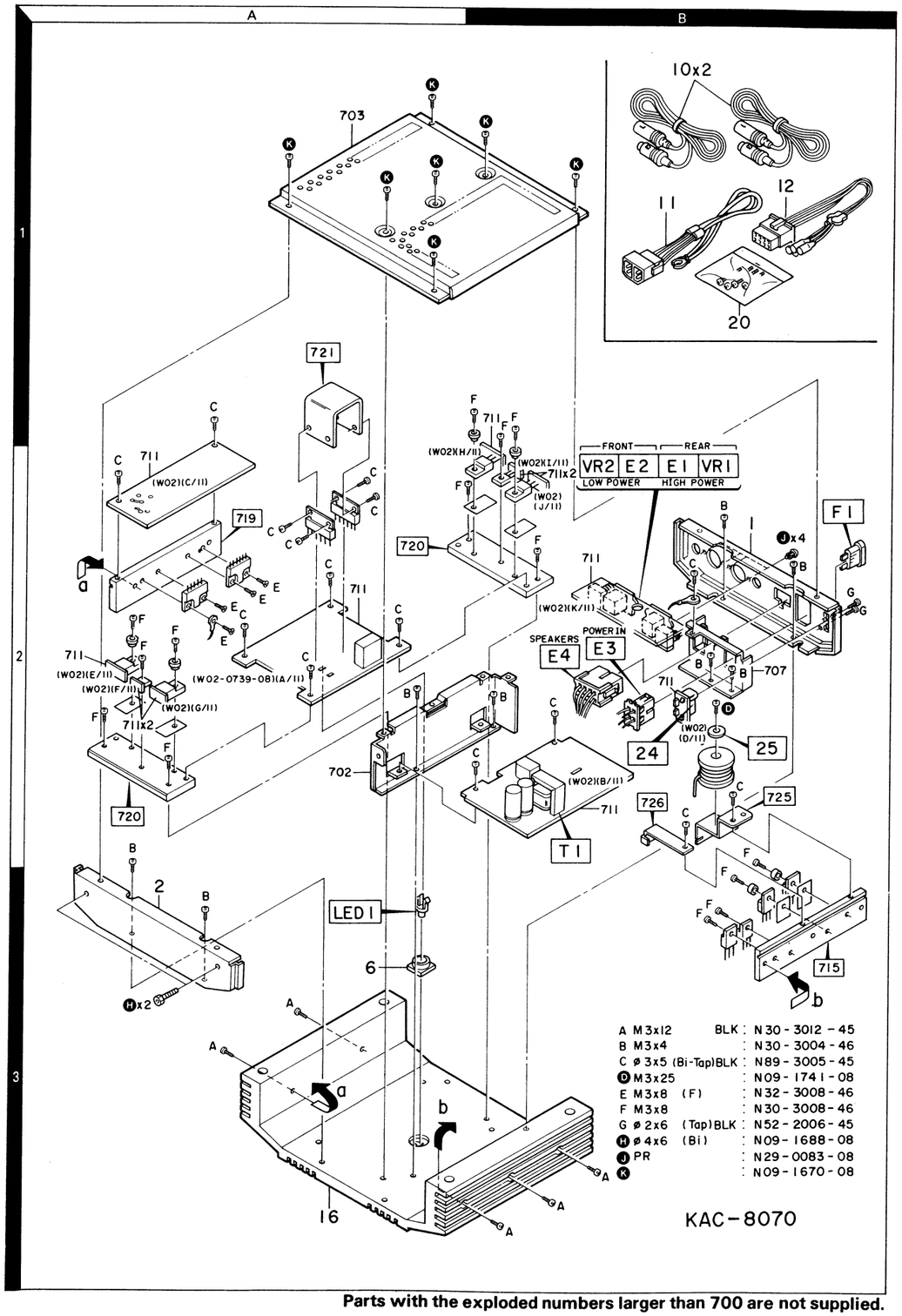
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

# KAC-8070

KENWOOD

# EXPLODED VIEW




**Parts with the exploded numbers larger than 700 are not supplied.**

# PARTS LIST

* New Parts

Parts without **Parts No.** are not supplied.

Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.

Teile ohne **Parts No.** werden nicht geliefert.

| Ref. No. 参照番号 | Address 位置 | New Parts 新 | Parts No. 部品番号 | Description 部品名／規格 | Destination 仕向 | Remarks 備考 |
|---|---|---|---|---|---|---|
| **KAC-8070** | | | | | | |
| 1 | 2B | * | A23-3430-08 | REAR PANEL | | |
| 2 | 3A | * | A29-0098-08 | PANEL | E | |
| 2 | 3A | * | A29-0099-08 | PANEL | T | |
| 6 | 3A | | B19-0395-08 | LIGHTING BOARD | T | |
| - | | | B46-0100-00 | WARRANTY CARD | E | |
| - | | | B46-0123-03 | WARRANTY CARD | T | |
| - | | * | B50-6559-00 | INSTRUCTION MANUAL(ENG,FRE) | E | |
| - | | * | B50-6560-00 | INSTRUCTION MANUAL(GER,ITA) | E | |
| - | | * | B50-6561-00 | INSTRUCTION MANUAL(ENGLISH) | T | |
| - | | | B58-0803-03 | CAUTION CARD | | |
| - | | * | B58-0831-00 | CAUTION CARD | | |
| 10 | 1B | | E30-1477-08 | DIN CORD (2M) | | |
| 11 | 1B | * | E30-1551-08 | DC POWER CORD | | |
| 12 | 1B | * | E30-1552-08 | SPEAKER CORD | | |
| 16 | 3A | * | F01-1144-08 | HEAT SINK | E | |
| 16 | 3A | * | F01-1145-08 | HEAT SINK | T | |
| - | | * | H01-7404-08 | ITEM CARTON BOX | E | |
| - | | * | H01-7405-08 | ITEM CARTON BOX | T | |
| - | | * | H03-0881-08 | OUTER PACKING CASE | E | |
| - | | * | H03-0882-08 | OUTER PACKING CASE | T | |
| - | | | H10-3373-08 | POLYSTYRENE FOAMED FIXTURE(L) | | |
| - | | * | H10-3374-08 | POLYSTYRENE FOAMED FIXTURE(R) | | |
| - | | * | H13-0006-08 | PAPER BOARD | | |
| - | | | H25-0096-04 | PROTECTION BAG | | |
| - | | | H25-0112-04 | PROTECTION BAG | | |
| - | | | H25-0173-04 | PROTECTION BAG | | |
| 20 | 1B | * | N99-0244-08 | SCREW SET (Ø4X45) | | |
| H | 3A | * | N09-1688-08 | SCREW (Ø4X6) | | |
| J | 2B | | N29-0083-08 | PUSH RIVET | | |
| K | 1A,1B | | N09-1670-08 | SCREW | | |
| **ELECTRIC UNIT (W02-0739-08)** | | | | | | |
| LED1 | 3A | * | B30-1120-08 | LED (SEL2213C) POWER | | |
| C1 | | | CE04DW1C221M | ELECTRO 220UF 16WV | | |
| C2 | | | CK45F1H473K | CERAMIC 0.047UF K | | |
| C3 | | | CQ92M1H102K | MYLAR 1000PF K | | |
| C4 | | | CE04DW1C100M | ELECTRO 10UF 16WV | | |
| C5 ,6 | | | CF92FV1H473J | MF 0.047UF J | | |
| C7 | | * | C90-1356-08 | ELECTRO 3900UF 16WV | | |
| C8 | | * | C91-0843-08 | CERAMIC 1UF 50WV | | |
| C9 ,10 | | * | C90-1472-08 | CERAMIC 2200UF 25WV | | |
| C11 ,12 | | | CF92FV1H104J | MF 0.10UF J | | |
| C13 | | | CE04DW1C222M | ELECTRO 2200UF 16WV | | |
| C14 | | | CQ92M1H103K | MYLAR 0.010UF K | | |
| C15 | | | CE04DW1H4R7M | ELECTRO 4.7UF 50WV | | |
| C16 ,17 | | | CE04DW1A221M | ELECTRO 220UF 10WV | | |
| C18 ,19 | | | CF92FV1H104J | MF 0.10UF J | | |
| C20 ,21 | | | CE04DW1H2R2M | ELECTRO 2.2UF 50WV | | |
| C22 ,23 | | | CE04DW1E102M | ELECTRO 1000UF 25WV | | |
| C24 ,25 | | | CF92FV1H104J | MF 0.10UF J | | |
| C26 | | | CE04DW1C221M | ELECTRO 220UF 16WV | | |
| C27 | | | CE04DW1C470M | ELECTRO 47UF 16WV | | |

**E**: Scandinavia & Europe **H**:Audio Club **K**: USA **P**: Canada **W**:Europe

**T**: England **U**: PX(Far East, Hawaii)

UE : AAFES(Europe) **X**: Australia **M**: Other Areas

⚠ indicates safety critical components.

# PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Telle ohne **Parts No.** werden nicht geliefert.

| Ref. No. 参照番号 | Address 位置 | New Parts 新 | Parts No. 部品番号 | Description 部品名／規格 | Destination 仕向 | Remarks 備考 |
|---|---|---|---|---|---|---|
| C28 | | | CE04DW1HR33M | ELECTRO 0.33UF 50WV | | |
| C29 | | | CF92FV1H473J | MF 0.047UF J | | |
| C30 | | | CE04DW1H2R2M | ELECTRO 2.2UF 50WV | | |
| C31 | | | CF92FV1H473J | MF 0.047UF J | | |
| C101 | | | CQ92M1H102K | MYLAR 1000PF K | | |
| C102 | | | CE04DW1C100M | ELECTRO 10UF 16WV | | |
| C103-105 | | | CE04DW1A101M | ELECTRO 100UF 10WV | | |
| C106 | | | CC45CH1H330J | CERAMIC 33PF J | | |
| C107 | | | CQ92M1H333K | MYLAR 0.033UF K | | |
| C108 | | | CE04DW1H2R2M | ELECTRO 2.2UF 50WV | | |
| C109 | | | CF92FV1H473J | MF 0.047UF J | | |
| C110 | | | CK45B1H102K | CERAMIC 1000PF K | | |
| C201 | | | CQ92M1H102K | MYLAR 1000PF K | | |
| C202 | | | CE04DW1C100M | ELECTRO 10UF 16WV | | |
| C203-205 | | | CE04DW1A101M | ELECTRO 100UF 10WV | | |
| C206 | | | CC45CH1H330J | CERAMIC 33PF J | | |
| C207 | | | CQ92M1H333K | MYLAR 0.033UF K | | |
| C208 | | | CE04DW1H2R2M | ELECTRO 2.2UF 50WV | | |
| C209 | | | CF92FV1H473J | MF 0.047UF J | | |
| C210 | | | CK45B1H102K | CERAMIC 1000PF K | | |
| C301 | | | CQ92M1H102K | MYLAR 1000PF K | | |
| C302 | | | CE04DW1H2R2M | ELECTRO 2.2UF 50WV | | |
| C303 | | | CE04DW1C100M | ELECTRO 10UF 16WV | | |
| C304 | | | CE04DW1H4R7M | ELECTRO 4.7UF 50WV | | |
| C305 | | | CQ92M1H102K | MYLAR 1000PF K | | |
| C306 | | | CQ92M1H333K | MYLAR 0.033UF K | | |
| C307,308 | | | CE04DW1A101M | ELECTRO 100UF 10WV | | |
| C309,310 | | | CE04DW1C221M | ELECTRO 220UF 16WV | | |
| C311-313 | | | CF92FV1H154J | MF 0.15UF J | | |
| C314 | | | CE04DW1C102M | ELECTRO 1000UF 16WV | | |
| C401 | | | CQ92M1H102K | MYLAR 1000PF K | | |
| C402 | | | CE04DW1H2R2M | ELECTRO 2.2UF 50WV | | |
| C403 | | | CE04DW1C100M | ELECTRO 10UF 16WV | | |
| C404 | | | CE04DW1H4R7M | ELECTRO 4.7UF 50WV | | |
| C405 | | | CQ92M1H102K | MYLAR 1000PF K | | |
| C406 | | | CQ92M1H333K | MYLAR 0.033UF K | | |
| C407,408 | | | CE04DW1A101M | ELECTRO 100UF 10WV | | |
| C409,410 | | | CE04DW1C221M | ELECTRO 220UF 16WV | | |
| C411-413 | | | CF92FV1H154J | MF 0.15UF J | | |
| C414 | | | CE04DW1C102M | ELECTRO 1000UF 16WV | | |
| E1 ,2 | 2B | | E06-0809-08 | CYLINDRICAL RECEPTACLE | | |
| E3 | 2B | * | E31-3963-08 | CONNECTING WIRE | | |
| E4 | 2B | * | E31-3964-08 | CONNECTING WIRE | | |
| F1 | 2B | * | F05-2038-05 | FUSE (20A) | | |
| 24 | 2B | * | J13-0063-08 | FUSE HOLDER | | |
| L1 | | * | L33-0321-08 | CHOKE COIL | | |
| L2 | | * | L33-0317-08 | CHOKE COIL | | |
| L101 | | * | L39-0113-08 | COIL | | |
| L201 | | * | L39-0113-08 | COIL | | |
| T1 | 2B | * | L19-0049-08 | BALUN TRANSFORMER | | |
| 25 | 2B | * | N19-1059-08 | FLAT WASHER (5X3X10) | | |
| D | 2B | * | N09-1741-08 | SCREW (Ø3X25) | | |

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# PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

| Ref. No. 参照番号 | Address 位置 | New Parts 新 | Parts No. 部品番号 | Description 部品名／規格 | Destination 仕向 | Remarks 備考 |
|---|---|---|---|---|---|---|
| R34 ,35 | | * | RD14CB2H821J | RD 820 J 1/2W | | |
| R36 | | * | RD14CB2H202J | RD 2.0K J 1/2W | | |
| R107,108 | | * | RN14BK2E202G | RN 2.0K G 1/4W | | |
| R109,110 | | * | RN14CK2E563G | RN 56K G 1/4W | | |
| R119,120 | | * | R92-0266-08 | METAL PLATE 0.1 J 2W | | |
| R124 | | | RS14AB3A100J | FL-PROOF RS 10 J 1W | | |
| R125 | | * | RD14CB2H100J | RD 10 J 1/2W | | |
| R207,208 | | * | RN14BK2E202G | RN 2.0K G 1/4W | | |
| R209,210 | | * | RN14CK2E563G | RN 56K G 1/4W | | |
| R219,220 | | * | R92-0266-08 | METAL PLATE 0.1 J 2W | | |
| R224 | | | RS14AB3A100J | FL-PROOF RS 10 J 1W | | |
| R225 | | * | RD14CB2H100J | RD 10 J 1/2W | | |
| R310,311 | | * | RN14CK2E200G | RN 20 G 1/4W | | |
| R312 | | * | RN14BK2E821G | RN 820 G 1/4W | | |
| R313 | | * | RN14CK2E821G | RN 820 G 1/4W | | |
| R410,411 | | * | RN14CK2E200G | RN 20 G 1/4W | | |
| R412 | | * | RN14BK2E821G | RN 820 G 1/4W | | |
| R413 | | * | RN14CK2E821G | RN 820 G 1/4W | | |
| RNF1 | | | R92-0351-08 | RN 1 K 1/4W | | |
| VR1 ,2 | 2B | * | R29-3021-08 | POTENTIOMETER(20KBX2)SENS | | |
| VR3 | | * | R12-2038-08 | TRIMMING POT.(5KB)VOLT SENSE | | |
| VR101 | | * | R12-1081-08 | TRIMMING POT.(1KB)IDLE | | |
| VR201 | | * | R12-1081-08 | TRIMMING POT.(1KB)IDLE | | |
| RL1 | | * | S51-1047-08 | RELAY (MUTING) | | |
| RL2 | | * | S51-2083-08 | RELAY (MUTING) | | |
| D1 | | | RM4Z | DIODE | | |
| D2 ,3 | | | 1S2076A | DIODE | | |
| D4 ,5 | | | RH1Z | DIODE | | |
| D6 | | * | FMU12S | DIODE | | |
| D7 | | * | FMU12R | DIODE | | |
| D8 ,9 | | | 1N4002 | DIODE | | |
| D10 | | | 1S2076A | DIODE | | |
| D101,102 | | | 1S2076A | DIODE | | |
| D201,202 | | | 1S2076A | DIODE | | |
| IC1 | | * | UPC494C | IC(SWITCHING REGULATOR) | | |
| IC2 | | | UPC1237H | IC(PROTECTION) | | |
| IC3 | | | NJM2068D-D | IC(OP AMP X2) | | |
| IC4 ,5 | | | UPC1270H | IC(POWER AMP) | | |
| IC6 ,7 | | * | UPC7250BP | IC(POWER AMP) | | |
| Q1 | | | 2SC2458(GR) | TRANSISTOR | | |
| Q2 | | | 2SA950(Y) | TRANSISTOR | | |
| Q3 ,4 | | * | 2SD809(F,E) | TRANSISTOR | | |
| Q5 ,6 | | | 2SD1062(S) | TRANSISTOR | | |
| Q7 | | | 2SA1048(GR) | TRANSISTOR | | |
| Q8 ,9 | | | 2SA950(Y) | TRANSISTOR | | |
| Q10 | | | 2SC1815(BL) | TRANSISTOR | | |
| Q101 | | | 2SC3421(Y) | TRANSISTOR | | |
| Q102 | | | 2SC1986(O,Y) | TRANSISTOR | | |
| Q103 | | | 2SA771(O,Y) | TRANSISTOR | | |
| Q104 | | | 2SC2458(GR) | TRANSISTOR | | |
| Q201 | | | 2SC3421(Y) | TRANSISTOR | | |
| Q202 | | | 2SC1986(O,Y) | TRANSISTOR | | |
| Q203 | | | 2SA771(O,Y) | TRANSISTOR | | |
| Q204 | | | 2SC2458(GR) | TRANSISTOR | | |

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| Ref. No. 参照番号 | Address 位置 | New Parts 新 | Parts No. 部品番号 | Description 部品名／規格 | Destination 仕向 | Remarks 備考 |
|---|---|---|---|---|---|---|
| Q301 | | | 2SA1048(GR) | TRANSISTOR | | |
| Q302 | | * | BA1L4M | TRANSISTOR | | |
| Q401 | | | 2SA1048(GR) | TRANSISTOR | | |
| Q402 | | * | BA1L4M | TRANSISTOR | | |
| ZD1 | | * | HZ7C1L | ZENER DIODE | | |
| ZD2 | | * | HZ6C2L | ZENER DIODE | | |
| ZD3 ,4 | | | HZ9A-2 | ZENER DIODE | | |

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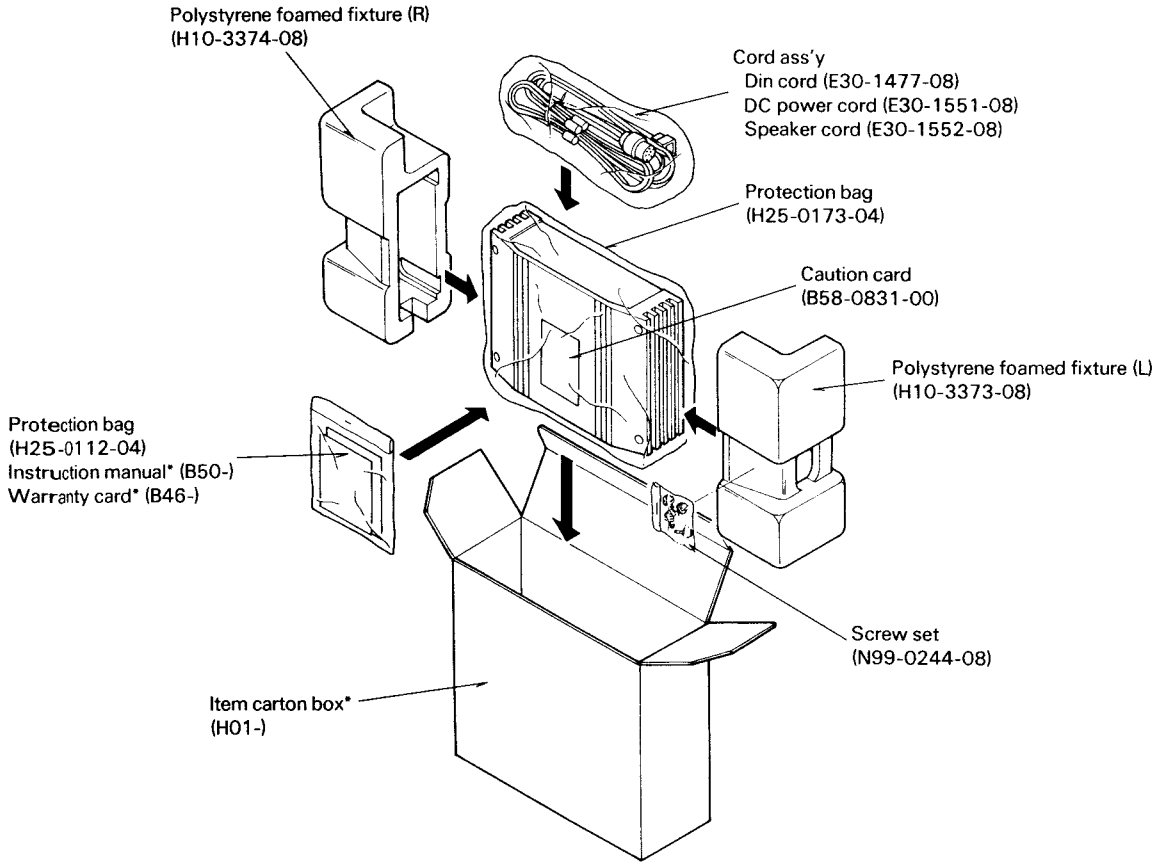
# PACKING



KAC-8070

# SPECIFICATIONS

Specifications subject to change without notice

## Audio Section

Maximum Power Output (4 ohms, 1 kHz)
- Rear ..... 70 W + 70 W
- Front ..... 35 W + 35 W

Power Output (4 ohms, 1 kHz 10% THD)
- Rear ..... 45 W + 45 W
- Front ..... 25 W + 25 W

(4 ohms, 20 Hz ~ 30 kHz, 1% THD)
- Rear ..... 37 W + 37 W
- Front ..... 20 W + 20 W

Frequency Response (−3 dB)
- Rear ..... 2 Hz ~ 100 kHz
- Front ..... 5 Hz ~ 50 kHz

Total Harmonic Distortion (10 W, 1 kHz, 4 ohms) ..... 0.007%
Signal to Noise Ratio (IEC-A) ..... 100 dB
Sensitivity (rated output)
- Max. ..... 0.1 V
- Min. ..... 2.0 V

Input Impedance ..... 10 kΩ
Damping Factor (1 kHz) ..... more than 100

## General

Operating voltage ..... 14.4 V (11 ~ 16 V)
Current Consumption (Max.) ..... 16 A
Dimensions (W × H × D) ..... 240 × 57 × 170 mm
(9-7/16") × (2-1/4") × (6-3/4")
Weight ..... 2.5 kg
5.5 lb

**Note:**
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.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